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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,650	09/24/2003	Terry Joseph Hendricks	NREL01-17	6789

23712 7590 09/09/2004

PAUL J WHITE, SENIOR COUNSEL
NATIONAL RENEWABLE ENERGY LABORATORY (NREL)
1617 COLE BOULEVARD
GOLDEN, CO 80401-3393

EXAMINER

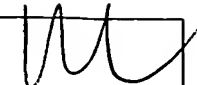
MCKINNON, TERRELL L

ART UNIT PAPER NUMBER

3743

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/670,650	HENDRICKS ET AL. 	
	Examiner	Art Unit	
	Terrell L Mckinnon	3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 and 24-29 is/are rejected.
- 7) ☒ Claim(s) 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the valve and sensors or triggers to the operate the valve must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 12, 13, 24-26, 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka et al. (JP 60-185654).

Tanaka discloses passive cooling system comprising all of the applicant's claimed and disclosed limitations of the instant invention.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4-11, 14-22, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (JP 60-185654) in view of Liu (U.S. 5,950,710).

Tanaka's invention discloses all of the claimed limitations from above except for the passive cooling system comprising a plurality of heat pipes; the thermoplastic polymer is polyvinylchloride; a thermally conductive film wherein the evaporator section of the heat pipe is thermally connected to the thermally conductive film and the thermally conductive film is embedded in the thermoplastic layer of the instrument

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Panel; the heat pipe is attached to the conductive film and the film is adhered to the thermoplastic layer of the instrument panel; the thermally conductive film is a metal selected from the group listed in claim 8; the thermally conductive film is a ceramic material selected from claim 9; the thermally conductive film is a carbon based material selected from claim 10; a bracket for accepting the heat pipe wherein the bracket is attached to the thermally conductive film; the passive cooling system of claim wherein the external portion of the vehicle is a side body panel; the external portion of the vehicle is a roof; the heat pipe is further defined as comprising copper and as containing water suitable for transferring the solar heat absorbed at the instrument panel to the external portion of the vehicle; the heat pipe is further defined as comprising a closable valve for substantially thermally disconnecting the evaporator section of the heat pipe from the condenser section of the heat pipe, wherein solar heat absorbed at the instrument panel is trapped in the evaporator section of the heat pipe when the valve is in a closed position; the valve is triggered to close at a preset instrument panel temperature; a passenger compartment within the vehicle, wherein the valve is triggered to close at a preset air temperature within the passenger compartment.

4. However, Liu teaches a passive cooling system comprising:

- the passive cooling system comprising a plurality of heat pipes (20);
- the use of a thermoplastic polymer, wherein official notice is taken in regards to the various alternate thermally conductive films and heat pipe materials that are equivalents and well known in the art;

- a thermally conductive film (30) wherein the evaporator section of the heat pipe is thermally connected to the thermally conductive film and the thermally conductive film is embedded in the thermoplastic layer;
- the heat pipe is attached to the conductive film and the film is adhered to the thermoplastic layer;
- a bracket (42) for accepting the heat pipe wherein the bracket is attached to the thermally conductive film;
- the passive cooling system of claim wherein the external portion of the vehicle is a side body panel;
- the external portion of the vehicle is a roof;
- the heat pipe is further defined as containing water suitable for transferring the solar heat absorbed in cabin portion to the external portion of the vehicle;
- the heat pipe is further defined as comprising a closable valve (26) for substantially thermally disconnecting the evaporator section of the heat pipe from the condenser section of the heat pipe, wherein solar heat absorbed at the cabin portion is trapped in the evaporator section of the heat pipe when the valve is in a closed position;
- the valve is triggered to close at a preset cabin temperature;
- a passenger compartment within the vehicle, wherein the valve is triggered to close at a preset air temperature within the passenger compartment.

Given the teachings of Liu, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the passive cooling system of Tanaka the passive cooling system comprising a plurality of heat pipes; the thermoplastic polymer is polyvinylchloride; a thermally conductive film wherein the evaporator section of the heat pipe is thermally connected to the thermally conductive film and the thermally conductive film is embedded in the thermoplastic layer of the instrument panel; the heat pipe is attached to the conductive film and the film is adhered to the thermoplastic layer of the instrument panel; the thermally conductive film is a metal selected from the group listed in claim 8; the thermally conductive film is a ceramic material selected from claim 9; the thermally conductive film is a carbon based material selected from claim 10; a bracket for accepting the heat pipe wherein the bracket is attached to the thermally conductive film; the passive cooling system of claim wherein the external portion of the vehicle is a side body panel; the external portion of the vehicle is a roof; the heat pipe is further defined as comprising copper and as containing water suitable for transferring the solar heat absorbed at the instrument panel to the external portion of the vehicle; the heat pipe is further defined as comprising a closable valve for substantially thermally disconnecting the evaporator section of the heat pipe from the condenser section of the heat pipe, wherein solar heat absorbed at the instrument panel is trapped in the evaporator section of the heat pipe when the valve is in a closed position; the valve is triggered to close at a preset instrument panel temperature; a passenger compartment within the vehicle, wherein the valve is triggered to close at a preset air temperature within the passenger compartment.

Doing so would provide an efficient and reliable means of cooling the instrument panel and cabin area of a vehicle.

Allowable Subject Matter

4. Claim 23 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited for disclosing related limitations of the applicant's claimed and disclosed invention. Rosenfeld et al, Frank, Jacobs, Eilenberg et al, Glass et al, Caplin, Hemingway et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L Mckinnon whose telephone number is 703-305-0059. The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on 308-0101. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Terrell L. McKinnon
Primary Examiner
Art Unit 3743
September 7, 2004